

Bear Valley Design, Ltd.

Engineers - Consultants



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August 30, 2022

Mr. Joe Duksa
D & D Enterprises, Inc.
40025 Baker Drive
Steamboat Springs
Colorado, 80487

Subject: Soils investigation and foundation evaluation for an existing office facility at the above address.

Dear Mr. Duksa,

Per your request, we visited the subject site earlier in August of this year. Our investigation was performed for the purpose of evaluating the subsoils on the site and inspecting the construction of the foundation of an existing office facility.

The existing facility is a 12 foot by 60 foot factory built structure which is of typical temporary structure construction, using two steel wide flange beams spaced approximately eight feet apart which run the length of the structure.

The building's two structural beams each bear on ²⁴ inch diameter concrete piers spaced approximately 8 feet on center and which extend approximately 2 feet above the grade of the nearly level site. Both beams are anchored to each of the piers using two pieces of steel plate which extend onto the bottom flanges of the beams and which are held down by 1/2" diameter anchor bolts set into the concrete piers. The perimeter of the building is surrounded by skirting of the type typically used for this type of structure.

A test pit was advanced on the site adjacent to and south of where the existing structure is situated. The test pit was advance using a track mounted excavator and revealed mixed fill approximately 24

inches thick overlying a very dense sandy gravel which remained uniform to the maximum depth explored, which was 11 feet.

Based on the soil conditions exposed in the test pit, we concluded that the underlying sandy gravel will support end loading of concrete piers of 5.0 Kips/square foot. We were informed that the existing piers were drilled to a depth of 10 feet below the existing, nearly level grade of the site, and that each pier is reinforced by means of 4 lengths of vertical #5 rebar.

Based on our calculations, inclusive of a total floor load of 50 lbs./square foot, a total roof load of 85 lbs./square foot, Zone C earthquake and 115 mph wind, the existing concrete piers are more than adequate to provide stable bearing, resistance to all lateral loads and resistance to all uplift loads.

The subsoils exposed in the test pit are also capable of providing stable, immune to frost heaving support for a thickened edge, reinforced slab designed to provide support and anchorage for a proposed (steel) ramp and landings intended to provide handicapped access to one of the exterior doors of the existing building. For such a slab, the upper 2 feet of mixed fill material found in the test pit must be stripped down to the sandy gravel. The sub-grade for the slab must be constructed above the sandy gravel using $\frac{3}{4}$ inch road base material compacted to 95% of its Standard Proctor density in lifts not exceeding 8 inches in thickness.

Thank you for the opportunity to have been of professional service to you in this matter.

Sincerely,
Bear Valley Design, Ltd.

A handwritten signature in black ink, appearing to read 'Gregory H. Hermann', is written over a red circular professional seal. The seal contains the text 'COLORADO LICENSED PROFESSIONAL ENGINEER' and 'GREGORY H. HERMANN'.

Gregory H. Hermann
Colorado P. E. #17422